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ABSTRACT

A system including a pumping cassette having a first side including number of valve wells and second side having a fluid bus. Each side may be covered by a flexible membrane. A control surface having a number of valve well control stations actuatable with respect to the flexible membrane covering the first side of the cassette to open and close the valve wells when the cassette is mated against the control surface may be included. A pressure distribution assembly having a positive and negative pressure source and a number of pneumatic valves may be included. A controller configured to selectively actuate the number of pneumatic valves to apply pressure against the valve well control stations in a valve pumping sequence until a volume displaced through the fluid bus of the pumping cassette from a source to a destination is within a range of a target volume may be included.

